Factors influencing on Consumer Behaviors and Perceptions of Top Personal Care Nivea vs Pond's (Case Study in Thaketa Township)

ဒီသုတေသနမှာ **Nivea** နဲ့ **Pond's** ဆိုတဲ့ အလှကုန်ပစ္စည်း ကုမ္ပဏီနှစ်ခုကို ရွေးချယ်သုံးစွဲသူတွေရဲ့ အပြုအမူနဲ့ သဘောထားကွာခြားချက်တွေကို **Thaketa မြို့နယ်** မှာ နမူနာယူပြီး လေ့လာထားတာဖြစ်ပါတယ်။

၁။ ဒေတာ စုဆောင်းခြင်း (Data Collection)

- **ဒေတာအမျိုးအစား:** ဒီသုတေသနမှာ **Primary Data (ကိုယ်တိုင် စုဆောင်းရရှိသော ဒေတာ)** ကို အသုံးပြုထားပါတယ်။
- **စစ်တမ်းကောက်ယူသည့်နေရာ:** ရန်ကုန်တိုင်း၊ **သာကေတမြို့နယ်**။
- **စစ်တမ်းကောက်ယူသည့်အချိန်:** စက်တင်ဘာလ၊ ၂၀၁၉ ခုနှစ်။
- **နမူနာယူနည်းလမ်း (Sampling Method): Two-Stage Sampling Method (အဆင့်နှစ်ဆင့်ဖြင့် နမူနာယူခြင်း)** ကို အသုံးပြုထားပါတယ်။
    1. **ပထမအဆင့်:** သာကေတမြို့နယ်မှာရှိတဲ့ ရပ်ကွက် ၁၉ ခုထဲမှ **၃ ခု**ကို **Simple Random Sampling (ကျပန်းနမူနာယူနည်း)** နဲ့ ရွေးချယ်ပါတယ်။
    2. **ဒုတိယအဆင့်:** ရွေးချယ်ထားတဲ့ ရပ်ကွက် ၃ ခုထဲက အိမ်ထောင်စုပေါင်း ၈၆၂၆ ခုထဲမှ **၃၀၆ ခု**ကို **Systematic Sampling (စနစ်တကျ နမူနာယူနည်း)** ဖြင့် (၂၈ အိမ်မှာ ၁ အိမ်နှုန်း) ထပ်မံရွေးချယ်ပါတယ်။
- **နမူနာအရေအတွက်: Cochran's Formula** ကို အသုံးပြုပြီး အိမ်ထောင်စု ၃၀၆ စု လိုအပ်ကြောင်း တွက်ချက်ထားပါတယ်။ ရွေးချယ်ထားသော အိမ်ထောင်စုများထဲမှ Nivea သုံးသူ ၁၅၅ ဦးနှင့် Pond's သုံးသူ ၁၅၁ ဦးကို ဆာဗေးမေးခွန်းတွေ မေးခဲ့ပါတယ်။

၂။ ဒေတာ ယုံကြည်စိတ်ချရမှု စစ်ဆေးခြင်း (Reliability Analysis)

ဒေတာတွေ တသမတ်တည်းရှိ-မရှိ၊ ယုံကြည်ရမှုရှိ-မရှိ စစ်ဆေးဖို့ **Reliability Analysis** လုပ်ပါတယ်။

- **အသုံးပြုသော စစ်ဆေးမှု: Cronbach's Alpha Coefficient**
- **ရလဒ်:** Cronbach's Alpha တန်ဖိုးမှာ **0.912** ရပါတယ်။
- **အဓိပ္ပာယ်:** ဒီတန်ဖိုးဟာ 0.7 ထက်မြင့်နေတာကြောင့် **စုဆောင်းထားသော ဒေတာများသည် အလွန်ယုံကြည်စိတ်ချရပြီး အတွင်းပိုင်းညီညွတ်မှုရှိကြောင်း** ပြသနေပါတယ်။ ဆိုလိုတာက မေးခွန်းလွှာထဲက မေးခွန်းတွေအားလုံးဟာ တစ်ခုနဲ့တစ်ခု ဆက်စပ်မှုရှိပြီး တိုင်းတာလိုတဲ့ အကြောင်းအရာကို ယုံယုံကြည်ကြည် တိုင်းတာနိုင်တယ်လို့ ဆိုလိုပါတယ်။

၃။ နမူနာ လုံလောက်မှု စစ်ဆေးခြင်း (Testing for Sampling Adequacy)

Factor Analysis လုပ်ဖို့ ဒေတာတွေက သင့်တော်ရဲ့လားဆိုတာ စစ်ဆေးပါတယ်။

- **အသုံးပြုသော စစ်ဆေးမှုများ:**
    1. **Kaiser-Meyer-Olkin (KMO) Test**
    2. **Bartlett's Test of Sphericity**
- **ရလဒ်များ:**
    - **KMO Value: 0.915** ရပါတယ်။
    - **Bartlett's Test:** p-value သည် **0.000** ဖြစ်ပါတယ်။
- **အဓိပ္ပာယ်:**
    - KMO တန်ဖိုးသည် 0.6 ထက်မြင့်နေပါက Factor Analysis လုပ်ရန် သင့်တော်ပါတယ်။ 0.915 ဆိုတဲ့တန်ဖိုးဟာ **အလွန်ကောင်းမွန်စွာ သင့်တော်ကြောင်း** ပြသနေပါတယ်။
    - Bartlett's Test ရဲ့ p-value သည် 0.05 ထက်နည်းနေတာကြောင့် **မေးခွန်းများကြားတွင် ဆက်စပ်မှုများ ရှိနေကြောင်း** ပြသနေပါတယ်။

၄။ အဓိကသုတေသနနည်းလမ်း (Main Research Methods)

ဒီသုတေသနမှာ ရည်ရွယ်ချက်နှစ်ခုအတွက် နည်းလမ်းနှစ်ခု အသုံးပြုထားပါတယ်။

(က) Factor Analysis (အကြောင်းရင်းများ ခွဲခြမ်းစိတ်ဖြာခြင်း)

- **ရည်ရွယ်ချက်:** စားသုံးသူတွေရဲ့ အပြုအမူနဲ့ သဘောထားတွေကို လွှမ်းမိုးနေတဲ့ **အဓိက အကြောင်းရင်းခံများ (Key Factors)** ကို ရှာဖွေဖို့ဖြစ်ပါတယ်။
- **အသုံးပြုသော နည်းလမ်း: Principal Component Method** နဲ့ **Varimax Rotation** ကို အသုံးပြုထားပါတယ်။
- **ရလဒ်:** မေးခွန်း ၂၄ ခုကနေ **အကြောင်းရင်း (Factor) ၄ ခု** ကို ရှာဖွေတွေ့ရှိခဲ့ပါတယ်။ ဒီအကြောင်းရင်း ၄ ခုကတော့...
    1. **အရည်အသွေးနှင့် ယုံကြည်မှု (Quality and Confidence):** ကုန်ပစ္စည်းရဲ့ အရည်အသွေး၊ သုံးစွဲရတဲ့ ယုံကြည်မှုစတာတွေနဲ့ သက်ဆိုင်ပါတယ်။
    2. **လက်လှမ်းမီနိုင်မှု (Availability):** ကုန်ပစ္စည်း ဝယ်ယူရန် လွယ်ကူမှု၊ စျေးဆိုင်တိုင်းတွင် ရရှိနိုင်မှုစတာတွေနဲ့ သက်ဆိုင်ပါတယ်။
    3. **ကြော်ငြာနှင့် ဆွဲဆောင်မှုများ (Promotions):** စျေးလျှော့ခြင်း၊ ဆုကြေးပေးခြင်း၊ ကြော်ငြာစတာတွေနဲ့ သက်ဆိုင်ပါတယ်။
    4. **အမှတ်တံဆိပ် ပုံရိပ် (Brand Image):** ကုန်အမှတ်တံဆိပ်ရဲ့နာမည်ကြီးမှု၊ လူသိများမှု၊ ခေတ်စားမှုစတာတွေနဲ့ သက်ဆိုင်ပါတယ်။
- **ရှင်းလင်းချက်:** Factor Analysis ဟာ မေးခွန်းအများကြီးကို အဓိက အကြောင်းရင်း ၄ ခုအဖြစ် အုပ်စုဖွဲ့ပေးလိုက်တာပါ။ ဒါကြောင့် စားသုံးသူကို ဘာကြောင့် ဒီပစ္စည်းကို ရွေးဝယ်သလဲဆိုတဲ့ အကြောင်းရင်း ၂၄ ခုကို မမှတ်မိတော့ဘဲ အဓိက အကြောင်းရင်း ၄ ခုအနေနဲ့ပဲ နားလည်လို့ရသွားပါတယ်။

(ခ) Binary Logistic Regression (ခွဲခြားခန့်မှန်းခြင်း)

- **ရည်ရွယ်ချက်:** အပေါ်က ရှာဖွေတွေ့ရှိထားတဲ့ အကြောင်းရင်း ၄ ခုထဲက **ဘယ်အကြောင်းရင်းက Nivea သုံးသူနဲ့ Pond's သုံးသူကို ခွဲခြားပေးနိုင်သလဲ** ဆိုတာကို သိရှိဖို့ဖြစ်ပါတယ်။
- **အသုံးပြုသော ကိန်းရှင်များ (Variables):**
    - **မှတ်မိလွယ်အောင်:** Y = 1 (Nivea သုံးသူ), Y = 0 (Pond's သုံးသူ)
    - **အဓိကအကြောင်းရင်း ၄ ခု (F1, F2, F3, F4)** ကို လွှမ်းမိုးနိုင်သော အကြောင်းရင်းများ (Independent Variables) အဖြစ် အသုံးပြုထားပါတယ်။
- **ရလဒ်:**
    - Nivea သုံးသူတွေဟာ **အရည်အသွေးနှင့် ယုံကြည်မှု (F1)** နဲ့ **အမှတ်တံဆိပ် ပုံရိပ် (F4)** ကို ပိုပြီး အလေးထားကြောင်း တွေ့ရပါတယ်။
    - Pond's သုံးသူတွေကတော့ **လက်လှမ်းမီနိုင်မှု (F2)** နဲ့ **ကြော်ငြာနှင့် ဆွဲဆောင်မှုများ (F3)** ကို ပိုပြီး အလေးထားကြောင်း တွေ့ရပါတယ်။
- **ရှင်းလင်းချက်:** Binary Logistic Regression ဟာ လူတစ်ယောက်ဟာ Nivea သုံးသူလား Pond's သုံးသူလား ခန့်မှန်းပေးနိုင်တဲ့ ညီမျှခြင်းတစ်ခုကို ဖန်တီးပေးပါတယ်။ ဒီညီမျှခြင်းထဲမှာ F1 (အရည်အသွေး) နဲ့ F4 (အမှတ်တံဆိပ်) တန်ဖိုးတွေ မြင့်လာရင် Nivea သုံးသူဖြစ်နိုင်ချေ ပိုများတယ်လို့ ဆုံးဖြတ်ချက်ချလို့ရပါတယ်။

📊 အနှစ်ချုပ်

ဒီသုတေသနရဲ့ Methodology ကို အတိုချုပ်ပြောရရင်...

1. **စနစ်တကျ** နမူနာရွေးယူပြီး **စစ်တမ်းကောက်ယူခဲ့တယ်**။
2. ကောက်ယူထားတဲ့ဒေတာတွေ **ယုံကြည်စိတ်ချရလား၊ Factor Analysis လုပ်လို့ရလား** ဆိုတာ စစ်ဆေးခဲ့တယ်။ (ဒေတာကောင်းပါတယ်)

3. စားသုံးသူအပြုအမူကို လွှမ်းမိုးနေတဲ့ **အဓိကအကြောင်းရင်း ၄ ခု** ကို **Factor Analysis** နဲ့ **ရှာဖွေတွေ့ရှိခဲ့တယ်**။

4. ဒီအကြောင်းရင်း ၄ ခုထဲက **ဘယ်ဟာက Nivea နဲ့ Pond's သုံးသူကို ခွဲခြားပေးနိုင်လဲ** ဆိုတာကို **Binary Logistic Regression** နဲ့ **ဆုံးဖြတ်ခဲ့တယ်**။

ဒီနည်းလမ်းတွေကြောင့် Nivea ကုမ္ပဏီအနေနဲ့ ကုန်ပစ္စည်းအရည်အသွေးနဲ့ အမှတ်တံဆိပ်ပုံရိပ်ကို ဘယ်လိုထိန်းသိမ်းသင့်တယ်၊ Pond's ကုမ္ပဏီအနေနဲ့ ကုန်ပစ္စည်းရရှိနိုင်မှုနဲ့ ဆွဲဆောင်မှုတွေကို ဘယ်လိုမြှင့်တင်သင့်တယ်ဆိုတဲ့ **အကြံပြုချက်တွေ** ကို ခိုင်မာတဲ့ ဒေတာတွေအပေါ် အခြေခံပြီး ပေးနိုင်ခဲ့တာဖြစ်ပါတယ်။

YANGON UNIVERSITY OF ECONOMICS
DEPARTMENT OF STATISTICS
MASTER OF APPLIED STATISTICS PROGRAMME

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AYE AYE KHAING
MAS - 15

DECEMBER, 2019

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This thesis is submitted to the Board of Examination as partial fulfillment of the requirements for the Degree of Master of Applied Statistics

Supervised by:

Daw Khin Nu Win
Associate Professor
Department of Statistics
Yangon University of Economics

Submitted by:

Aye Aye Khaing
Roll No. 15
MAS (Batch-1)
Yangon University of Economics

DECEMBER, 2019

ACCEPTANCE

Accepted by the Board of Examiners of the Department of Statistics, Yangon University of Economics in partial fulfillment for the requirement of the Master Degree, Master of Applied Statistics.

.....……

(Chairperson)

Prof. Dr Tin Win

Rector

Yangon University of Economics

……	…….
(Supervisor)	(Chief Examiner)
Daw Khin Nu Win	Prof. Dr. Maw Maw Khin
Associate Professor	Professor/Head
Department of Statistics	Department of Statistics
Yangon University of Economics	Yangon University of Economics

……	…….
(Examiner)	(Examiner)
Daw Aye Aye Than	Prof. Dr. Mya Thandar
Associate Professor (Retd.)	Professor
Department of Statistics	Department of Statistics
Yangon University of Economics	Yangon University of Economics

ABSTRACT

The purpose of this study is to identify the critical factors which ar mainly influence on the consumer behavior and perception on brand choice among the personal care brands. This study is only competition between Nivea and Pond's Brand choice. Factor Analysis and multiple regression analysis are used in the study to meet the respective objectives. In this study, four factors are most critical factors that mainly influence to making buying signal and brand loyalty. These four factors are Quality and Confidence, Availability, Promotions and Brand Image. According to the results, it is observed that the factors influencing on consumer behaviors and perceptions of Nivea are more likely to be influencing on quality and confidence, and brand image but they are less likely to be influencing on availability and promotions of the product. In addition, Factors influencing on consumer behaviors and perceptions of non-Nivea user (Pond's) are more likely to be availability and promotions of the product but they are less likely to be influencing on quality and confidence, and brand image of the product.

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CHAPTER I
INTRODUCTION

1.1 Rationale of the Study

Behavior of consumers is a key factor for the success of business organizations. Marketing persons are constantly analyzing the patterns of buying behavior and purchase decisions to predict the future trends. Consumer behavior can be studied as the analysis of "how, when, what and why" people buy. It is an essential for marketer to study the consumer behaviors. Moreover it helps not only the marketer but also to understand the purchase of consumer for any business.

Despite Myanmar continuing to experience strong economic growth in 2018, it continues to struggle with a high rural population, underemployment and high inflation. However, it is beginning to benefit from increasing disposable incomes, urbanization and improved access to water and electricity. Nevertheless, the use of beauty and personal care continues to be limited to more affluent urban consumers with the rural majority continuing to use traditional alternatives. It is predicted to continue to record a strong performance over the forecast period, with actual current value sales more than doubling in number by 2023 compared to 2018, with color cosmetics, which will continue to be growing from a low sales base and skin care recording high current value growth rates. The category's performance will be supported by consumer sophistication leading to a growing middle class that will be interested in and able to purchase these products. The forecast for beauty and personal care brand segments is Retail Value RSP-611275 million (Myanmar Kyat) current-2004-2023 with 20.5 growth year on year.

Urban consumers are influenced not only by Western trends but also by other Asian cultures such as South Korea as the Korean Wave remains the strong amongst teenagers and young adults in Myanmar. Myanmar is having tanned skin amongst local women, who generally wish to have fairer skin. An increasing number of urban women are taking care of their skin. There are no significant religious factors which prohibit consumers from buying beauty and personal care products in Myanmar. Traditional sandalwood paste (known locally as thanaka) is made from sandalwood trees which

grow in abundance in Central Myanmar. This is the main traditional skin care product applied by both men and women, many in rural areas to protect against sun damage. Beauty and personal care is predicted to continue to record a strong performance over the forecast period, with actual current value sales more than doubling in number by 2023 compared to 2018, with color cosmetics, which will continue to be growing from a low sales base and skin care recording high current value growth rates.

Myanmar is one of the poorest countries in Southeast Asia and continues to have limited urbanisation, with 64% of the total population living in rural areas at the end of the review period. Despite increasing liberalization in the country, many consumers remain highly traditional in their attitudes, while the prevalence of traditional personal care regimes is also linked to low income levels. Consumers from all income groups continue to use traditional alternatives such as coconut oil and thanaka ground tree bark. Therefore, different socioeconomic groups consider various factors when deciding which beauty and personal care products to be purchased.

Consumers tend to search for established brand names and product quality, whereas for lower-income consumers, the price of the product is the main purchasing decision factor when considering whether to buy packaged beauty and personal care. There are also differences in terms of consumption habits. For instance, lower income consumers purchase basic necessities such as bar soap, shampoos and toothpaste and have basic requirements for color cosmetics such as lipstick, foundation/concealer and moisturizer, which are either locally manufactured or originate from neighboring countries such as Thailand and China (rather than premium brands imported from South Korea or Western products). Mid- to high income consumers are becoming increasingly sophisticated in their purchasing habits. Purchases of beauty and personal care are primarily seen in urban areas with greater choice for consumers in terms of distribution channels such as hypermarkets, beauty counters at department stores and beauty specialist retailers, in addition to the slowly emerging internet retailing. Lower-income consumers, including some rural consumers, are starting to purchase packaged beauty and personal care products including color cosmetics and skin care. These are mainly mid- to high-income urban consumers, with this group also the most interested in grooming and beauty trends. This is therefore to support the search for and purchase of beauty and personal care products through internet retailing.

Nivea is a famous skin care brand, Nivea was established in the year 1882 by a pharmacist of German by name Carl Paul Beiersdorf. Nivea's success in the personal

care brand was acknowledged when it introduced the skin-lightening products like whitening paste which was a huge hit across Asia. Their main products are whitening cream, moisturizer, fascial foam, day crème and night crème, sun crème and deodorant. Nivea products which contain whitening ingredients are the brand's biggest sellers. Over the years Nivea extended its product lines with many products. It has gained recognition for its brand and has a brand value of about 6.7 Billion dollars.

Pond's is a famous brand of beauty and healthcare products, Ponds is owned by Unilever and established in the year 1846. Ponds manufactures and deals with a wide range of personal care products. Their main products are talcum powder, petroleum jelly, face wash, cold cream, and soap, Ponds moisturizers, Ponds Cleansers, Ponds Oil, and Face Wipes. Ponds cream was introduced as a medicine by scientist Theron T Pond in the United States. Over the years, this brand was a well-accepted brand among Americans and concentrated on producing vanishing cream. The main target customer for this brand is the women ever since its formation.

Top eleven brands are competing with Nivea Brand. There are Vaseline, Pond's, Clinique, Johnson & Johnson, Lakme, Dove, Olay, Garnier, Estee Lauder, Shiseido and Neutrogena (Bhasin, 2018). In Myanmar, There are top 20 companies in beauty and personal care. Pond's Company is standing on second rank and Nivea Company is standing on sixth rank (Euromonitor, 2019). Both of these two brands have a good product line and the products launched by the company have always enhanced the brand value. Due to their affordable prices and strong distribution, Ponds is considered as one of the top Nivea competitors. The competition between these two brands are very high. In this study, to explore which factors are influencing on consumer behaviors and perceptions of Nivea and Pond's. And which factors should be more focused to get more market share of Nivea and Pond's. In the current Myanmar market, Pond's face category is getting more share. Other side of Pond's, Nivea is also maintaining their share of face and others category also. In the red ocean personal care market, Nivea and Pond's competition is very high. Hence, factors influencing on consumer behavior and perception of top personal care band Nivea Vs Pond's is studied and also an effective tool to use market insight of current situations.

1.2 Objectives of the Study

The objectives of the study are as follows:

- To examine the demographic and socioeconomic characteristics of Nivea and Pond's users.
- To investigate the influencing factors of consumer behaviors and perceptions of the respondents on Nivea Vs Pond's.

1.3 Method of Study

Descriptive statistic is used to examine the demographic and socio-economics characteristic of the respondents and their behaviors and perceptions on two brands of personal care Nivea and Pond's. In addition, factors analysis and binary logistics regression analysis is employed to investigate which factors are influencing on these two brands.

1.4 Scope and Limitations of the Study

The study is based on primary data. A sample survey is conducted in Thaketa Township, Yangon Division in September, 2019. There are 19 wards in Thaketa Township. The required sample size of 306 households is obtained by Cochran's method (Appendix I). In this study, two stage sampling method is used. In the first stage, 3 wards are selected from 19 wards by simple random sampling method. In the second stage, 306 households were chosen from three selected wards by 1 in 28 systematic sampling method. A well-structured questionnaires is employed to meet the objective and presented in Appendix II. Only the consumers of Nivea and Pond's in the selected households are interviewed in the study.

1.5 Organization of the Study

This Study is organized with five chapters. Chapter 1 includes introduction, rationale of the study, and objective of the study, scope and limitations of the study, method of study, and organization of the study. Chapter 2 is presented with overview of the consumer behaviours and perceptions, Research Methodology is discussed in Chapter 3 and Chapter 4 explained statistical analysis of consumer behavior and perception on top personal care brand (Nivea Vs Pond's). The factor analysis is applied to reveal the internal structure of the attributes. Applying the result got from the factors and binary logistic regression method were applied. The last Chapter, summarized findings and recommendations.

CHAPTER II

OVERVIEW OF CONSUMER BEHAVIOR AND PERCEPTION

Consumer behaviour is defined as the behaviour that consumers display in searching for purchasing, using, evaluating and disposing of products and services that they expect will satisfy their needs. Consumer behaviour focuses on how individuals make decisions to spend their available resources (time, money, effort) on consumption related items. That includes what they buy, why they buy it, when they buy it, where they buy it, how often they buy it, how often they use it, how they evaluate it after the purchase and the impact of such evaluations on future purchases and how they disposed of it. The scope of consumer behaviour includes not only the actual buyer and his act of buying but also various roles played by different individuals and influence they expect on the final purchase decision. The term consumer behaviour describes two different kinds of consuming entities: the personal consumer and the organizational consumer. The personal consumer buys goods and services for his or her own use, for the use of the household, or as a gift for a friend. In each of these contexts, the products are bought for final use by individuals, who are referred to as end users or ultimate consumers. The second category of consumer, the organizational consumer includes profit and non for profit business, government agencies (local, state and national), and institutions (e.g. Schools, hospitals and prisons), all of which must buy products, equipment, and services in order to run their organization.

2.1 Consumer Decision Making Process

Consumers are making many purchase decisions every day. Most of the largest companies do extensive market research on consumer buying decision, to investigate what consumers buy, where they buy, how often they buy, how much they buy, when they buy and why they buy, for those reasons to reorganize the decision at different five stages they needed, information search and evaluation of alternatives, purchase and post purchase decision.

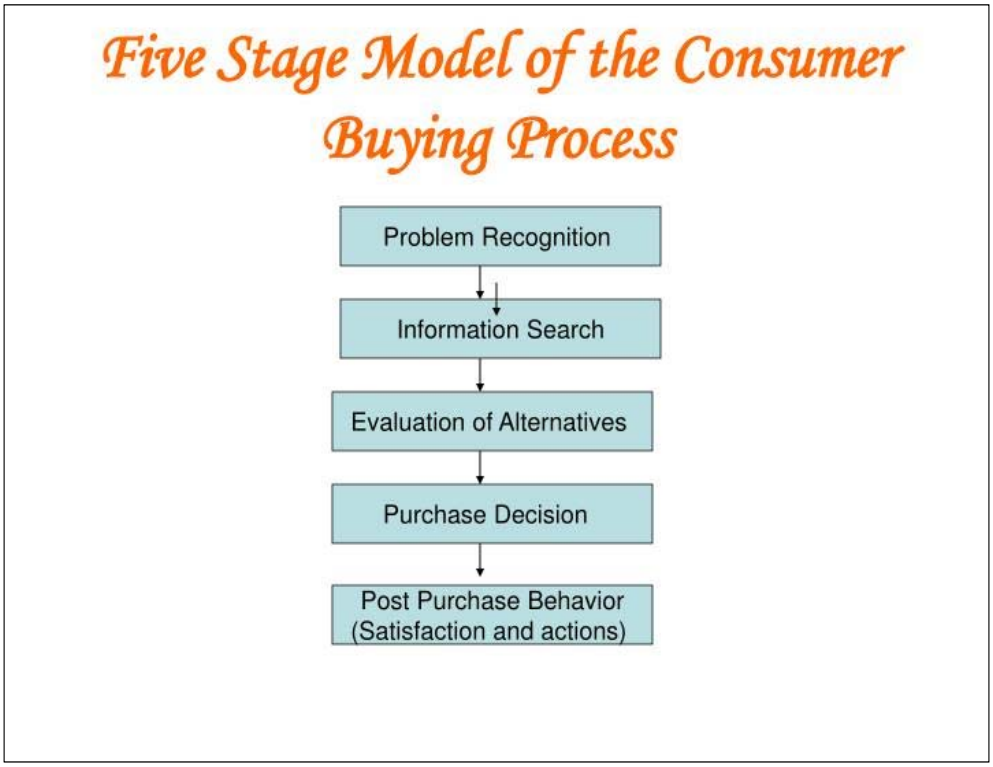
(a) The need recognition: the buying process starts with need recognition, where as buyers recognize the need. The buyer's decision depends on his/her internal and external stimuli of consumer behavior. According to this internal and external stimuli's the buyer will make the decision (Hawkins, Coney, 1998)

(b) Searching information: The consumers are searching the information from the various sources that are information search, personal sources, commercial sources, public source and experimental sources: this is also the process of the buying decision process before purchase of the product (Hawkins, Coney,1998)

(c) Evaluation of alternatives: The consumer evaluates all the alternatives available to her/him to arrive at a brand choice. The consumer is likely to develop aspect of brand belief about, where each brand stands on each attribute. The belief held about the particular brand is known as brand image, according to the beliefs and preference of the consumer, evaluates the alternative product instead of using existing products (Philip Kotler, 2004).

(d) Purchase decision: In the evaluation stage, the consumer ranks all the brands and makes a purchase intention. The attitude of others and unexpected situation factors both directly or indirectly effect on the consumer's final decision to buy a particular brand (Philip Kotler,2004)

(e) Post purchase decision: The buyer's job does not end when the product is bought. After purchasing the product, the consumer will be satisfied or dissatisfied and will be engaged in post purchase behavior. The satisfaction or dissatisfaction of the purchase of a particular product depends on the relationship between the consumer expectation and the consumer disappointment, if it meets the consumer expectations, the consumer can be satisfied. And if it exceeds he/she is delighted (Gilly and Gelb, 1986). This study emphasized on four stages. These stages are problem recognition stage, information search, evaluation of alternative and purchase stage.



Source:https://www.slideserve.com/sheri/five-stage-model-of-the-consumer-buying-process

Figure (2. 1): Five Stage Model of the Consumer Buying Process

2.2 Marketing Mix- 4P's

The firm's marketing activities are a direct attempt to reach, inform, and persuade consumers to buy and use its products. These inputs to the consumer's decision making process take the form of specific marketing-mix strategies that consist of the product itself (including its package, size, mass media advertising, personal selling, direct marketing, promotional efforts, price policy and the selection of distribution channel to move the product from the manufacturer to the consumer. (Kotler, Philip & Keller, Kevin, Marketing Management, 13teen Prentice Hall.2008, P.168). The marketing mix is the set of controllable, tactical marketing tools that the firm blend to produce the response it wants in the target market. The marketing mix consists of four groups of variables known as the "Four Ps": product, price, place and promotion. The marketer must integrate these elements to maximize the impact of their product or service on consumers. These marketing mix influence of the consumer behaviors and perception on top personal care Nivea and Pond's brand.

Product

Product means anything that can be offered to a market for attention, acquisition, use, or consumption that might satisfy a want or need. Products include more than just tangible goods. When consumers purchase a product, they buy not only its tangible features but also its intangible attributes, including its functional, social and psychological benefits. Products are often a firm's most important links with consumers. This is critical to the achievement of organizational objectives. The product is one of the activities in marketing mix. Promotion, distribution and price decisions must be coordinated with product decisions. Products are one of the most important links with the customers among the marketing activities. If a products does not meet the desires and needs of the consumer, the organization will fail. If it identifies consumer needs and wants and develops the products that satisfy them, the organization will succeed Packaging can be a powerful competitive tool as well as a major component of a marketing strategy. Therefore, these product factors influence on decision making in buying personal care product.

Price

Pricing has been a major factor affecting buying decision. Price is the only one of the marketing mix tools that a company uses to achieve its marketing objectives. It is the only flexible element in the marketing mix. The price variable is important in the design of marketing strategy because customers are concerned about the value obtained in a purchase. The price of a product determines the offering which the **customers** are willing to give to buy that product. The price can neither be too low that the seller incurs losses, nor be too high that the consumers cannot afford to buy the product.

Place or Distribution

A marketing manager attempts to make product available in the quantities desired by as many customers as possible and to reduce distribution costs as possible. Marketing channels provide the vital link with the customer. An organization can gain a competitive edge by providing products on a timely basis in the form desired by customers. The organization that is unable or unwilling to develop efficient marketing channels will have trouble competing and may find themselves out of business. Therefore, it is important to recognize the different types of marketing channels and the number of marketing intermediaries needed to serve various target markets. The market

where the product is sold is known as place. The markets should be convenient for the consumers to access. Distribution network for a product determines its availability in shops/outlets. These distribution factors influence on decision making in buying personal care.

Promotion

Promotion factors influence on consumer behaviors and perceptions of personal care product. Promotion refers to any communication activity used to persuade and remind to target market about an organization. Promotion-mix refers to an optimum combination of different promotional tools and techniques; with a view to maximizing sales and profits. The need for promotion-mix arises because all promotional tools and techniques are not equally effective and appealing. Promotion mix imparts a variety to the promotional efforts of the marketing manager. The method of communication by which the marketer provides information about the product is known as promotion. It included advertisements, personal selling, word of mouth publicity etc.

Source: Internet Website

Figure (2. 2): Marketing Mix 4p's

CHAPTER III
RESEARCH METHODOLOGY

Chapter III consists of reliability analysis, and testing for sampling adequacy, methods of estimation, factor analysis, and logistic regression are presented.

3.1 Reliability Analysis

Reliability is the scale construction counterpart of precision and accuracy in physical measurement. Reliability can be thought of as consistency in measurement. To establish the reliability of the data, the reliability coefficient (Cronbach Alpha) was verified. There are a number of different reliability coefficients. One of the most commonly used is Cronbach's alpha. Cronbach's alpha can be interpreted as a correlation coefficient; it ranges a value from 0 to 1. Robinson and Shaver (1973) suggested that if Alpha is greater than 0.7, it means high reliability and if Alpha is smaller than 0.3, it means low reliability.

Reliability Test

Before using the factor analysis, it is very important to test the reliability of the dimensions in the questionnaires. Cronbach's alpha, a statistical test used to examine the internal consistency of attributes, was determined for each dimension. This statistical test shows that the attributes are related to each other and to the composite scores. The composite scores for each section of the questionnaires were obtained by summing up the scores of individual statements. Cronbach's alpha is defined as –

$$\alpha = \frac{K}{K-1}\left[1 - \frac{\sum_{i=1}^{k} S_i^2}{S_T^2}\right]$$

Where

α =Cronbach's alpha,

K= Number of Statement

S_i^2 = variance of each statement

S_T^2 = variance for sum of all items

If alpha value is high, then this suggests that all of the items are reliable and the entire test is internally consistent. If alpha is low, then at least one of the items is unreliable and must be identified via item analysis procedure. However, the Cronbach's alpha value should be above 0.7.

3.2 Testing for Sampling Adequacy

Kaiser-Meyer-Olkin (KMO) test is a measure of how suited the data is for Factor Analysis. The test measures sampling adequacy for each variable in the model and for the complete model. The statistics is a measure of the proportion of variance among variables that might be common variance. The lower the proportion, the more suited the data is for Factor Analysis. KMO takes the value between 0 and 1. A rule of thumb is for interpreting the statistic. KMO value lies between 0.8 and 1.0 indicates that the sampling is adequate. KMO value less than 0.6 indicates that the sampling is not adequate and that remedial action should be taken. KMO values close to zero means that there are large partial correlations compared to the sum of correlations. In other words, there are widespread correlations which are a large problem for factor analysis.

The Bartlett's test of Spherically relates to the significance of the study and thereby shows the validity and suitability of the responses collected to the problem being addressed through the study. For a large sample, Bartlett's test approximates a Chi-square distribution. However, the Bartlett's test compares the observed correlation matrix to the identity matrix. Therefore, the Bartlett's test forms something of a bottom-line test for large samples, but is less reliable for small samples. For factor analysis to be recommended suitable, the Bartlett's Test of Sphericity must be less than 0.05. In addition, very small values of significance (below 0.05) indicate a high probability that is significant relationship between the variables, whereas higher values (0.1 or above) indicate the data is inappropriate for factor analysis.

Orthogonal factor

The orthogonal factor (Richard A. Johnson, 1992) was described. The observable random vector X, with p components, has mean μ and covariance matrix **Σ**.

The factor model postulates that **X** is linearly dependent upon a few unobservable random variables F_1, F_2, …., F_m, called common factors, and p additional sources of variation e_1, e_2, … e_p, called errors or, sometimes, specific factors. in particular, the factor model can be selected as follows:

factor is

$$X_1 - \mu_1 = \ell_{11}F_1 + \ell_{12}F_2 + \ell_{13}F_3 + \ldots + \ell_{1m}F_m + \varepsilon_1$$
$$X_2 - \mu_2 = \ell_{21}F_1 + \ell_{22}F_2 + \ell_{23}F_3 + \ldots + \ell_{2m}F_m + \varepsilon_2$$
$$\vdots \qquad\qquad \vdots$$
$$X_p - \mu_p = \ell_{p1}F_1 + \ell_{p2}F_2 + \ell_{p3}F_3 + \ldots + \ell_{pm}F_m + \varepsilon_p$$

or in matrix notation,

$$\underset{(p\times 1)}{\mathbf{X} - \boldsymbol{\mu}} = \underset{(p\times m)}{\mathbf{L}}\ \underset{(m\times 1)}{\mathbf{F}} + \underset{(p\times 1)}{\boldsymbol{\varepsilon}}$$

μ_i = mean of variable *i*

ε_i = *i*th specific factor

F_j = *j*th common factor

ℓ_{ij} = loading of the *i*th variable on the jth factors

The unobservable random vectors **F** and **ε** satisfy the following conditions:

F and ε are independent

$$E(\mathbf{F}) = \mathbf{0}, \text{Cov}(\mathbf{F}) = \mathbf{I}$$

$E(\boldsymbol{\varepsilon}) = \mathbf{0}$, $\text{Cov}(\boldsymbol{\varepsilon}) = \boldsymbol{\Psi}$, where **Ψ**is a diagonal matrix

Covariance Structure

The orthogonal factor model implies a covariance structure for **X**,

$$\sum = \text{Cov}(\mathbf{X}) = \text{E}(\text{X} - \mu)$$
$$= \text{LE}(\text{FF}')L' + \text{E}(\varepsilon F')L' + \text{LE}(F\varepsilon') + \text{E}(\varepsilon\varepsilon')$$
$$= \mathbf{LL}' + \boldsymbol{\Psi}$$

by independence, $\text{Cov}(\boldsymbol{\varepsilon},\mathbf{F}) = \text{E}(\varepsilon,\text{F}') = 0$

$$\text{Cov}(\mathbf{X}) = \mathbf{LL}' + \boldsymbol{\Psi}$$

or

$$\text{Var}(X_i) = \ell_{i1}^2 + \cdots + \ell_{im}^2 + \psi_i$$

$$\text{Cov}(X_i, X_k) = \ell_{i1}\ell_{k1} + \ell_{i2}\ell_{k2} + \cdots + \ell_{im}\ell_{km}$$
$$\text{Cov}(\mathbf{X}, \mathbf{F}) = \mathbf{L}$$

or

$$\text{Cov}(X_i, F_j) = \ell_{ij}$$

The model $\mathbf{X} - \boldsymbol{\mu} = \mathbf{LF} + \boldsymbol{\varepsilon}$ is linear in the common factors. The portion of the variance of the i^{th} variable contributed by the m common factors is called the i^{th} communality. That portion of Var (X_i) = σ_{ii} due to the specific factor is called uniqueness or specific variance. Denoting the i^{th} communality by h_i^2,

$$\underbrace{\sigma_{ii}}_{\text{Var}(X_i)} = \underbrace{\ell_{i1}^2 + \ell_{i2}^2 + \cdots + \ell_{im}^2}_{\text{communality}} + \underbrace{\psi_i}_{\text{Specific Variance}}$$

or

$$h_i^2 = \ell_{i1}^2 + \ell_{i2}^2 + \cdots + \ell_{im}^2$$

and

$$\sigma_{ii} = h_i^2 + \psi_i, \qquad i = 1, 2, \cdots, p$$

The i^{th} communality is the sum of squares of the loadings of the i^{th} variable on the m common factors.

3.3 Methods of Estimation

The sample covariance matrix **S** is an estimator of the unknown population covariance matrix $\sum$**.** If the off-diagonal elements of **S** are small or those of the sample correlation matrix **R** essentially zero, the variables are not related, and a factor analysis will not prove useful. In these circumstances, the specific factors play the dominant role, whereas the major aim of factors analysis is to determine a few important common factors (Richard A. Johnson, 1992).

If $\sum$ appears to deviate significantly from a diagonal matrix, then a factor model can be entertained, and the initial problem is one of estimating factor loadings $\boldsymbol{\ell_{ij}}$ and specific variances $\boldsymbol{\psi_i}$. Two most popular methods of the parameter estimation are the principal component method and the maximum likelihood method. the solution from either method can be rotated in order to simplify the interpretation of factors. If the factor model is appropriate for the problem to try, more than one method of solutions should be consistent with one another.

3.4 The Principal Component Method (Principal Factor)

The Principal Factor (Richard A. Johnson, 1992) was described. The spectral decomposition provides us with one factoring of the covariance matrix Σ. Let Σ have eigenvalue – eigenvector pairs $(\lambda_{i,}e_i)$ with$\lambda_1 \geq \lambda_2 \geq \cdots \geq \lambda_p \geq 0$. Then,

$$\sum = \lambda_1 e_{\ 1} e_1^{'} + \lambda_2 e_{\ 2} e_2^{'} + \cdots + \lambda_p e_{\ p} e_p^{'}$$

$$= \left[\sqrt{\lambda_1}e_1 \vdots \sqrt{\lambda_2}e_2 \vdots \cdots \vdots \sqrt{\lambda_p}e_p\right] \begin{bmatrix} \sqrt{\lambda_1}e_1^{'} \\ \hdashline \sqrt{\lambda_2}e_2^{'} \\ \hdashline \vdots \\ \hdashline \sqrt{\lambda_p}e_p^{'} \end{bmatrix}$$

This fits the prescribed covariance structure for the factor analysis model having as many factors as variables (m =p) and specific variances ψ_i = 0 for all i, the loading matrix has jth column given by $\sqrt{\lambda_i}e_j$. This can be written

$$\underset{(p\times p)}{\sum} = \underset{(p\times p)}{\mathbf{L}}\ \underset{(p\times p)}{\mathbf{L}^{'}} + \underset{(p\times p)}{\mathbf{0}} = \mathbf{L}\mathbf{L}^{'}$$

Apart from the scale factor $\sqrt{\lambda_i}$, the factor loadings on the j^{th} factor are the coefficients for the jth principal component of the population.

Although the factor analysis representation of **Σ** is exact, it is not particularly useful. It employs many common factors as there are variables and does not allow for any variation in the specific factors $\boldsymbol{\varepsilon}$. One approach when the last **p-m** eigenvalues are small is to neglect the contribution of $\lambda_{m+1}e_{m+1}e_{m+1}^{'} + \cdots + \lambda_p e_p e_p^{'}$ to ∑. Neglecting this contribution, the approximation is obtained.

$$\sum = \left[\sqrt{\lambda_1}\mathbf{e}_1 \vdots \sqrt{\lambda_2}\mathbf{e}_2 \vdots \cdots \vdots \sqrt{\lambda_m}\mathbf{e}_m\right] \begin{bmatrix} \sqrt{\lambda_1}e_1^{'} \\ \hdashline \sqrt{\lambda_2}e_2^{'} \\ \hdashline \vdots \\ \hdashline \sqrt{\lambda_m}e_m^{'} \end{bmatrix} = \underset{(p\times m)}{\mathbf{L}}\ \underset{(m\times p)}{\mathbf{L}^{'}}$$

The approximate representation is assuming that the specific factors $\boldsymbol{\varepsilon}$ are of minor importance and can also be ignored in the factoring of **Σ**. The approximation can be written as the following:

$$\sum = \mathbf{L}\,\mathbf{L}^{'} + \boldsymbol{\Psi}$$

$$= \left[\sqrt{\lambda_1}\mathbf{e}_1 \;\vdots\; \sqrt{\lambda_2}\mathbf{e}_2 \;\vdots\; \cdots \;\vdots\; \sqrt{\lambda_m}\mathbf{e}_m\right] \begin{bmatrix} \sqrt{\lambda_1}\mathbf{e}_1' \\ \cdots\cdots \\ \sqrt{\lambda_2}\mathbf{e}_2' \\ \cdots\cdots \\ \vdots \\ \cdots\cdots \\ \sqrt{\lambda_m}\mathbf{e}_m' \end{bmatrix} + \begin{bmatrix} \psi_1 & 0 & \cdots & 0 \\ 0 & \psi_2 & \cdots & 0 \\ \vdots & \vdots & \ddots & \vdots \\ 0 & 0 & \cdots & \psi_p \end{bmatrix}$$

where $\psi_i = \sigma_{ii} - \sum_{j=1}^{m} \ell_{ij}^2$ for $i = 1, 2, \ldots, p$

To apply this approach to a data set $\mathbf{x}_1, \mathbf{x}_2, \ldots, \mathbf{x}_n$, it is customary first to center the observations by subtracting the sample mean $\bar{x}$. The cantered observations

$$\mathbf{x}_j - \bar{\mathbf{x}} = \begin{bmatrix} x_{j1} \\ x_{j2} \\ \vdots \\ x_{jp} \end{bmatrix} - \begin{bmatrix} \bar{x}_1 \\ \bar{x}_2 \\ \vdots \\ \bar{x}_p \end{bmatrix} = \begin{bmatrix} x_{j1} - \bar{x}_1 \\ x_{j2} - \bar{x}_2 \\ \vdots \;\vdots\; \vdots \\ x_{jp} - \bar{x}_p \end{bmatrix}, \; j = 1, 2, \ldots, n$$

have the same sample covariance matrix **S** as the original observations.

In cases where the units of the variables are not commensurate, it is usually desirable to work with the standardized variables.

$$\mathbf{z}_j = \begin{bmatrix} \dfrac{(x_{j1} - \bar{x}_1)}{\sqrt{s_{11}}} \\ \dfrac{(x_{j2} - \bar{x}_2)}{\sqrt{s_{22}}} \\ \vdots \\ \dfrac{(x_{jp} - \bar{x}_p)}{\sqrt{s_{pp}}} \end{bmatrix}, \; j = 1,2, \ldots, n$$

This sample covariance matrix is the sample correlation matrix **R** of the observations $\mathbf{x}_1, \mathbf{x}_2, \ldots, \mathbf{x}_n$, Standardization avoids the problems of having one variable with large variance unduly influencing the determination of factor loadings. The sample covariance matrix **S** or the sample correlation matrix **R** is known as principal component solution.

Principal Component Solution

The principal component solution (Richard A. Johnson, 1992) was described. The principal component factor analysis of the sample covariance matrix **S** is specified in terms of its eigenvalue – eigenvector pairs $(\hat{\lambda}_1, \hat{e}_1), (\hat{\lambda}_2, \hat{e}_2), (\hat{\lambda}_3, \hat{e}_3), \ldots, (\hat{\lambda}_p, \hat{e}_p)$ where . $\hat{\lambda}_1 \geq \hat{\lambda}_2 \geq \hat{\lambda}_3 \geq \cdots \geq \hat{\lambda}_p$.

Let m < p be the number of common factors. Then the matrix of estimated factor loading $(\tilde{\ell}_{ij})$ is given …

$$\tilde{\mathbf{L}} = \left[\sqrt{\hat{\lambda}_1}\,\hat{\mathbf{e}}_1 \;\middle|\; \sqrt{\hat{\lambda}_2}\,\hat{\mathbf{e}}_2 \;\middle|\; \sqrt{\hat{\lambda}_3}\,\hat{\mathbf{e}}_3 \;\middle|\; \cdots \;\middle|\; \sqrt{\hat{\lambda}_p}\,\hat{\mathbf{e}}_p \right]$$

The estimated specific variance are provided by the diagonal elements of the matrix S - $\tilde{\mathrm{L}}\tilde{L}'$.

$$\tilde{\Psi} = \begin{bmatrix} \widetilde{\psi_1} & 0 & \cdots & 0 \\ 0 & \widetilde{\psi_2} & \cdots & 0 \\ \vdots & \vdots & \ddots & \vdots \\ 0 & 0 & \cdots & \widetilde{\psi_p} \end{bmatrix} \quad \text{with} \quad \widetilde{\psi_i} = \mathrm{s}_{ij} - \sum_{j=1}^{m} \widetilde{\ell_{ij}^2}$$

Communalities are estimated as

$$\tilde{h} = \tilde{\ell}_{i1}^2 + \tilde{\ell}_{i2}^2 + \cdots + \tilde{\ell}_{im}^2$$

The principal component factor analysis of the sample correlation matrix is obtained by starting with **R** in place of **S**.

Residual Matrix

If the number of common factors is not determined by a priori considerations based on the estimated eigenvalues in much the same manner as with principal component, consider the residual matrix

$$\mathbf{S} - (\tilde{\mathbf{L}}\tilde{\mathbf{L}}' + \tilde{\mathbf{\Psi}})$$

Resulting from the approximation of S by the principal component solution. The diagonal elements are zero. Sum of squared entries of

$$(S - (\tilde{\mathbf{L}}\tilde{\mathbf{L}}' + \tilde{\mathbf{\Psi}})) \;\leq\; \hat{\lambda}_{m-1}^2 + \cdots + \hat{\lambda}_p^2$$

The contributions of the first few factors to the sample variances of the variables should be large. The contribution to the sample variance s_{ii} from the first common factor is $\widetilde{\ell_{i1}^2}$. The contribution to the total sample variance, $s_{11} + s_{22} + \cdots + s_{pp} = \mathrm{tr}\,(\mathbf{S})$, from the first common factor is then

$$\tilde{\ell}_{11}^2 + \tilde{\ell}_{21}^2 + \cdots + \tilde{\ell}_{p1}^2 = (\sqrt{\hat{\lambda}_1}\,\hat{\mathbf{e}}_1)'(\sqrt{\hat{\lambda}_1}\,\hat{\mathbf{e}}_1) = \hat{\lambda}_1$$

since the eigenvector $\hat{e_1}$ has unit length. In general,

$$\begin{pmatrix} Proportion\ of\ total \\ sample\ variance \\ due\ to\ jth\ factor \end{pmatrix} = \begin{cases} \dfrac{\hat{\lambda}_j}{s_{11} + s_{11} + s_{11} + \ \ldots\ + s_{pp}} & \text{for a factor analysis of } \mathbf{S} \\ \dfrac{\hat{\lambda}_j}{p} & \text{for a factor analysis of } \mathbf{R} \end{cases}$$

is frequently used as a heuristic device for determining the appropriate number of common factors. The number of common factors retained in the model is increased until a "suitable proportion" of the total sample variance has been explained.

Factor Rotation

The factor rotation (Richard A. Johnson, 1992) was described. All factor loadings obtained from the initial loadings by a orthogonal transformation have the same ability to reproduce the covariance matrix. An orthogonal transformation of the factor loadings as well as the implied orthogonal transformation of the factors is called factor rotation. If $\hat{L}$ if the p x m matrix of estimated factor loadings obtained by any method; then

$\hat{\mathbf{L}}^* = \hat{\mathbf{L}}\mathbf{T}$, where $\mathbf{T}\mathbf{T}' = \mathbf{T}'\mathbf{T} = \mathbf{I}$ is a $p \times$ m matrix of rotated loadings.

The estimated covariance matrix remains unchanged, since

$$\hat{\mathbf{L}}\hat{\mathbf{L}}' + \hat{\Psi} = \hat{\mathbf{L}}\mathbf{T}\mathbf{T}'\hat{\mathbf{L}} + \hat{\mathbf{\Psi}} = \hat{\mathbf{L}}^*\hat{\mathbf{L}}*' + \hat{\mathbf{\Psi}}$$

Equation indicates that the residual matrix, $\mathbf{S}_n - \hat{\mathbf{L}}\hat{\mathbf{L}}' - \hat{\mathbf{\Psi}} = \mathbf{S}_n - \hat{\mathbf{L}}^*\hat{\mathbf{L}}*' + \hat{\mathbf{\Psi}}$ remains unchanged. The specific variance $\widehat{\psi_i}$ and hence the communalities $\hat{h}_i^2$, are unaltered. Thus, from a mathematical viewpoint, it is immaterial whether $\hat{\mathbf{L}}$ or $\hat{\mathbf{L}}^*$ is obtained.

The original loading may not be readily interpretable. It is usual practice to rotate until a simpler structure is achieved. Each variable loads-highly on a single factor and has small to moderate loadings on the remaining factors. It is possible to get this simple structure and the rotated loading for the decathlon data provide a clear pattern. Graphical and analytical methods should be concentrated for determining an orthogonal rotation to a simple structure.

Oblique Rotation

The oblique rotation (Richard A. Johnson, 1992) was described. Orthogonal rotations are appropriate for a factor model in which the common factors are assumed to be independent. Many investigators in social sciences consider oblique (nonorthogonal) rotations, as well as orthogonal rotations. Oblique rotation is frequently a useful aid in factor analysis.

If the *m* common factors as coordinate axes, the point with the *m* coordinates $(\hat{\ell}_{i1,}\hat{\ell}_{i2,}\hat{\ell}_{i3,}, \ldots, \hat{\ell}_{im})$ represents the position of the i^{th} variable in the factor space. Assuming that the variables are grouped into non-overlapping clusters, an orthogonal

rotation to a simple structure corresponds to a rigid rotation of the coordinate axes such that the axes, after rotation, pass as Frequent to the clusters as possible. An oblique rotation to a simple corresponds to a nonrigid rotation of the coordinate system such that the rotated axes (no longer perpendicular) pass (nearly) through the clusters. An oblique rotation seeks to express each variable in terms of a minimum number of factors preferably, a single factor.

The Varimax Rotation

The varimax rotation (Richard A. Johnson, 1992) was described. When principal components analysis and factor analysis identify the underlying factors, they do so using a greedy algorithm. They begin by identifying the first component in such a way that it explains as much variance as possible, and proceed by identifying the next component in such a way that it explains the maximum possible amount of the remaining variance and so on.

In statistics, a varimax rotation is used to simplify the expression of a particular sub-space in terms of judging a few major items each. The actual coordinate system is unchanged, it is the orthogonal basis that is being rotated to align with those coordinates. The sub-space found with principal component analysis or factor analysis is expressed as a dense basis with many non-zero weights which makes it hard to interpret. Varimax is so called because it maximizes the sum of the variances of the squared loadings (squared correlations between variables and factors). In addition to, varimax rotation, where the factor axes are kept at right angles to each other, is most frequently chosen. Ordinarily, rotation reduces the number of complex variables and improves interpretation. Almost all applications of principal component analysis and factor analysis in survey research apply the varimax rotation method.

3.5 Logistic Regression

Logistic regression allows one to predict a discrete outcome, such as group membership from a set of variables that may be continuous, discrete, dichotomous, or a mix of any of these. Generally, the dependent variable is dichotomous, such as male/female, smoker/nonsmoker, and success/failure. While discriminant analysis is also used to predict group membership with only two groups, logistic regression is more flexible in that it has no assumption about the distributions of the predictor variables.

Logistic methods have become an integral component of any data analysis concerned with describing the relationship between a response variable and one or more explanatory variables. Logistic regression, a statistical modeling method for categorical data has expanded from its origins in biomedical research to fields such as business and finance, engineering, marketing, economics, and health policy (Meyers et al.2006). Logistic regression was proposed as an alternative in the late 1960s and early 1970s (Cabrera, 1994), and it became routinely available in statistical packages in the early 1980s. Logistic regression has found two broad applications in applied research: classification (predicting group membership) and profiling (differentiating between two groups based on certain factors) (Tansey et al.1996). It is important to understand that the goal of an analysis using this method is the same as that of any model-building technique used in statistics: to find the best fitting and most parsimonious to describe the relationship between the outcomes (dependent or response variable) and a set of independent (predictor or explanatory) variables.

Binary Logistic Regression Model

The dependent variable in logistic regression is usually dichotomous, that is the dependent variable can take value1 with a probability of success, P(Y=1) = π, or the value 0 with probability of failure P(Y= 0) = 1-π. This type of variable is called a binary variable.

The binary logistic regression model in the usual form is

$$Y_i = E(Y_i) + \varepsilon_i$$

Since the distribution of the error term ε_i depends on the Bernoulli distribution of the responseY_i. The expected value of each Y_i is

$$\mathrm{E}(Y_i) = \pi_i = \frac{\exp(\beta_0+\beta_1+X_1+\cdots\beta_iX_i)}{1+\exp(\beta_0+\beta_1+X_1+\cdots\beta_iX_i)}$$

Where $\mathrm{E}(Y_i)$ = conditional mean given the value of X_i

β_0 = the constant of the equation

β_1 = the coefficient of the predictor variable i

An alternative form of the logistic regression equation is:

$$\log[\pi(X)] = \log[\frac{\pi_i}{1-\pi_i}] = \beta_0 + \beta_1 + X_1 + \cdots \beta_iX_i$$

Likelihood Ratio Test

The likelihood ratio test is performed to see where the inclusion of an explanatory variable in a model tells us more about the outcome variable than a model that does not include that variable.

The likelihood ratio test is based on likelihood function. The likelihood ratio is

$$\frac{L(R)}{L(F)}$$

Where L (F) = the likelihood value for full model, L(R) = the likelihood value for the reduced model. The actual test statistic for likelihood radio test is denoted by X^2.

$$X^2 = -2\log_e \left[\frac{L(R)}{L(F)}\right] = 2\log_e(L(F) - 2\log_e L(R)$$

Wald Test

Wald test is used as a test of significance for the coefficients in the logistic regression. Wald statistic follows a chi-square distribution. Agresti (1996) has stated that the likelihood-radio test is more reliable for small sample size than the Wald test.

$$W = S.E(\widehat{\beta_\iota})$$

The Hosmer-Lemeshow Test

Goodness-of-fit statistics assess the fit of a logistic model against actual outcomes. The inferential goodness-of-fit test for logistic model is the Hosmer-Lemeshow (H-L) test. The H-L statistic, $\hat{C}$, is a person chi-square statistic, calculated from a g x 2 table of observed and estimated frequencies, where g is the number of groups formed from the estimated probabilities. A formula defining the calculation of $\hat{C}$ is as follows:

$$\hat{C} = \sum_{k=1}^{g} \frac{(O_k - n\prime_k \bar{\pi}_k)^2}{n'_k \bar{\pi}_k (1-\bar{\pi}_k)}$$

Where n'_k is the total number of subjects in k^{th} group, C_k denotes the number of covariate patterns in the k^{th} decile,

$O_k = \sum_{j=1}^{ch} y_i$, is the number of responses among the C_k covariate patterns, and the average estimated probability is

$$\bar{\pi}_k = \sum_{j=1}^{ch} \frac{m_j \pi_j}{n_{k\prime}}$$

CHAPTER IV
ANALYSIS OF THE SURVEY DATA

In this chapter, demographic characteristics of respondents, behaviors and perceptions of respondents, factor analysis of consumer behaviors and perceptions of Nivea Vs Pond's and analysis of binary logistics regression model are presented.

4.1 Demographic Characteristics of Respondents

The demographic characteristics of respondents are age, gender, and monthly income, types of respondents and education of the respondents.

Age of the Respondents

Table (4.1) described the age of the respondents.

Table (4. 1): Age of the Respondents

Age (Years)	Nivea		Pond's	
	Number	Percentage	Number	Percentage
10-20	4	3	16	11
21-30	107	69	85	56
31-40	35	23	27	18
41-50	7	4	13	9
above 50	2	1	10	6
Total	155	100	151	100

Data Source: Thaketa Township Survey Data 2019

The age group of Nivea respondents are the most in 21 to 30 years age group which contributed 69% and in the 31 to 40 years age group which contributed 23% of Nivea respondents. The age group of Pond's respondents are the most in 21 to 30 years age group which it's contributed 56% and in the group of 31 to 40 years which it contributed 18% of Pond's respondents. The age groups 21 to 30 years and 31 to 40 years respondents highly contributed 92% of Nivea respondents. The respondents (74%) contributed in 21 to 30 years and 31 to 40 years age group of Pond's respondents.

The age group of 10 to 20 years, 41 to 50 years and above 50 years of Nivea respondents are contributed to 3%, 4% and 1% respectively. And it is also similarly in Pond's respondents who contributed 11%, 9%, and 6% respectively in each of the age group.

Gender of the Respondents

The Table (4.1) presented gender of the respondents.

Table (4. 2): Gender of the Respondents

Gender	Nivea		Pond's	
	Number	Percentage	Number	Percentage
Male	58	37	44	29
Female	97	63	107	71
Total	155	100	151	100

Data Source: Thaketa Township Survey Data 2019

Female respondents used Nivea and Pond's more than male respondents. In Nivea, the user of male user respondents are 58 and female user respondents are 97. In Pond's, the user of male user respondent are 44 and female user respondents are 109. It can be observed that the user of male respondents in Nivea and Pond's constituted 37% and 29%. Hence, the user of female user respondents are nearly double of the male users. Moreover, the male respondents are more used Nivea and female respondents are more used Pond's.

Types of the Respondents

The following Table (4.3) described the types of the respondents.

Table (4. 3): Types of the Respondents

Types	Nivea		Pond's	
	Number	Percentage	Number	Percentage
High School Student	6	4	7	5
University Student	11	7	9	6
Worker	135	87	109	72
Housewife	3	2	26	17
Total	155	100	151	100

Data Source: Thaketa Township Survey Data 2019

In this study, there are four types of respondents. They are high school students, university students, workers and housewives. According to the results, most of the respondents are found to be workers using of these two brands. There are 87% in Nivea and 72% in Pond's. Housewives are only 2% in Nivea and 17% in Pond's. Therefore, it can be seem that Pond's user is much more found in housewife.

Monthly Income of the Respondents

The Table (4.4) showed monthly income of the respondents.

Table (4. 4): Monthly Income of the Respondents

Monthly Income (Lakh)	Nivea		Pond's	
	Number	Percentage	Number	Percentage
0.5-1.5	19	12	26	17
1.5-2.5	33	21	34	22
2.5-3.5	24	16	34	23
3.5-4.5	19	12	20	13
4.5-5.5	12	8	10	7
5.5-7	11	7	8	5
Above 7	37	24	19	13
Total	155	100	151	100

Data Source: Thaketa Township Survey Data 2019

The monthly income are categorized into by seven classes. The lowest group of monthly income is 0.5 and 1.5 lakhs and the highest monthly income is above 7 lakhs. Based on the results, the respondents of monthly income group 1.5 to 2.5 lakhs and above 7 lakhs mostly used in Nivea and the respondents from monthly income group of 1.5 to 2.5 lakhs and 2.5 to 3.5 lakhs group are mostly used Pond's.

Educational Levels of the Respondents

The following Table (4.5) presented educational level of the respondents.

Table (4. 5): Educational Levels of the Respondents

Educational Levels	Nivea		Pond's	
	Number	Percentage	Number	Percentage
Diploma	17	11	13	9
Graduate	74	48	69	46
Post Graduate	40	26	18	12
Master	17	11	11	7
Under Graduate	7	4	40	26
Total	155	100	151	100

Data Source: Thaketa Township Survey Data 2019

The education levels of the respondents are classified by five categories. These are diploma, graduate, post graduate, master and under graduate. Among these categories, most of the graduate respondents used these two brands in which 48% used in Nivea users and 46% used in Pond's. The 26% of the respondents who used Nivea are post graduates and 26% of the respondents used Pond's who are under graduate as shown Table (4.5).

4.2 Behaviors and Perceptions of the Respondents

In this section, behaviors and perception of the respondents are presented by categories, **t**rust on beauty blogger's recommends, consuming time, brand switching, range on the price choice, reasons for choice, brand awareness through with communication channel, buying place and promotions interest of the respondents.

Uses of the Respondents by Categories

Table (4.6) presented the uses of the respondent's by categories.

Table (4. 6): The Uses of the Respondent's by Categories

Categories	Nivea		Pond's	
	Number	Percentage	Number	Percentage
Face	47	30	127	84
Body	32	21	4	3
Deodorant	36	23	3	2
Face & Body	9	6	9	6
Face & Deodorant	17	11	5	3
Body & Deodorant	9	6	1	1
All	5	3	2	1
Total	155	100	151	100

Data Source: Thaketa Township Survey Data 2019

The uses of the respondents by categories are separated by seven types. These are Face, Body, Deodorant, Face& Body, Face & Deodorant, Body & Deodorant and All. According to the above Table (4.6), most of the respondents use face category of these two brands. In the face category, Pond's users are nearly triple of Nivea users 84% of the Pond's users used face category and a few respondents used other categories. According to the results, Pond's is very strong in face category. Face, Body and Deodorant categories are found quite similarly as Nivea Brand which contributed 30%, 21%, 23% respectively in each category. Generally, Face category is very strong among all categories.

Trust of the Respondents on Beauty Blogger's Recommends

Table (4.7) showed the trust of the respondents on beauty blogger's recommends.

Table (4. 7): Trust of the respondent on Beauty Blogger's Recommends

Trust	Nivea		Pond's	
	Number	Percentage	Number	Percentage
Yes	104	67	102	67
No	51	33	49	33
Total	155	100	151	100

Data Source: Thaketa Township Survey Data 2019

According to this study, 67% of Nivea respondents had the trust on beauty blogger's recommendation and 33% of Nivea respondents do not rely on beauty blogger's recommendation. Similarly, 67% of Pond's respondents had the truth on beauty blogger's recommendation and 33% of Pond's respondents do not rely on beauty blogger's recommendation. Two third of the respondents have truth on beauty blogger's recommendation and one third of respondents' buying decision come from their knowledge and family or close friend referral.

Consuming Time of the Respondents

The following Table (4.8) showed consuming time of two brands of the respondents.

Table (4. 8): Consuming Time of Two Brands of the Respondents

Consuming Time	Nivea		Pond's	
	Number	Percentage	Number	Percentage
Less than 6 months	24	16	23	15
6 months- 1 Years	19	12	33	22
1-2 Years	25	16	38	25
2-3 Years	19	12	27	18
3-5 Years	18	12	13	9
Over 5 Years	50	32	17	11
Total	155	100	151	100

Data Source: Thaketa Township Survey Data 2019

Consuming time are divided by six groups of the respondents according to consuming period. Based on the results, most of the Nivea respondents are used nearly 15% of group except above 5 years consuming period. Above 5 years consuming period of respondents are 32% in Nivea. In Pond's brand, respondents are used in 6months-1year group and 1- 2 year group which it 22% and 25% of contribution. Above 5 years consuming period group of Pond's user is found in 11% of Pond's respondents. According to the results, Nivea had more loyalty consumers than Pond's.

Brand Switching of the Respondents

The following Table (4.9) described the brand switch of the respondents.

Table (4. 9): Brand Switch of the Respondents

Brand Switching	Nivea		Pond's	
	Number	Percentage	Number	Percentage
From Nivea to Pond	-	-	46	31
From Pond to Nivea	20	13	-	-
From Other Brand to Nivea	100	64	-	-
From Other Brand to Pond	-	-	70	46
Never	35	23	35	23
Total	155	100	151	100

Data Source: Thaketa Township Survey Data 2019

Table (4.9) presents the brand switching from Nivea to Pond's, Pond's to Nivea, other brand to Nivea, other brand to Pond's and never switch to these brands. The brand switching from Nivea to Pond's is 31% and Pond's to Nivea is 13% and other brand to Nivea is 64% of the respondents and other brand to Pond's is 46% and only Nivea or Pond's only are used 23%, 23% respectively. In this study, Pond's is getting new customer due to brand switching. And also Nivea is getting consumer shared form other brand. Nivea customers are switching three times of Pond's.

Range on the Price of the Respondent's Choice

The Table (4.10) showed the range on the price of the respondent's choice.

Table (4. 10): The Range on the Price of the Respondent's Choice

Price Range (Kyats)	Nivea		Pond's	
	Number	Percentage	Number	Percentage
1000-2000	5	3	15	10
2000-3000	38	25	38	25
3000-4000	75	48	58	38
5000 & Above	37	24	40	27
Total	155	100	151	100

Data Source: Thaketa Township Survey Data 2019

There are four groups of price range of consumer spend on personal care brand Nivea and Pond's. Based on the findings, between 1000 kyats to 2000 kyats price range is found in 3% in Nivea Brand and 10% in Pond's. Between 2000 kyats-3000 kyats price range is found in 25% in Nivea and 25% in Pond's brand. Between 3000 kyats to 4000 kyats price range is found in 48% in Nivea and 38% in Pond's. And most of the consumer are spending between 3000 kyats and 4000 kyats on Nivea and Pond's. Above 5000 kyats price range is spent by 24% in Nivea and 27% contributed in Pond's. The results of the respondents of both brands showed those who can spend more than 2000 kyats are 97% of Nivea respondents and 90% of Pond's respondents.

Reasons for Choice of the Respondents

Table (4.11) presented the reasons for the choice of the respondents.

Table (4. 11): Reasons for Choice of the Respondents

Reason for Choice	Nivea		Pond's	
	Number	Percentage	Number	Percentage
Product Ingredients	36	23	39	26
Convenience to buy	58	37	42	28
Sales Promoter Recommend	14	9	13	9
Product Quality	116	75	104	69
Price	86	56	66	44
Product Availability	32	21	20	13
Friend's Recommend	30	19	37	25
Brand Famous	48	31	28	19
Product Packaging	15	10	17	11
TVC Advertising	24	16	31	21
Other	8	5	8	5

Data Source: Thaketa Township Survey Data 2019

There are twelve reasons for consumer's choice. These are product ingredients, convenience to buy, sales promoter recommend, product quality, price, product availability, friend's recommend, brand famous, product packaging and TVC advertising. In this study, main reasons for choice of brand are product quality which iis 75 % of Nivea users and 69% of Pond's and followed by price 56% of Nivea users and 44% of Pond's. Thirty seven percent of Nivea users and twenty eight percent of Pond's users had been chosen convenience to buy. Sales promotor recommendation is founded in 9% of Nivea users and 9% of Pond's users.

Brand Awareness through with Communication Channel of the Respondents

The following Table (4.12) described the brand awareness from communication channel of the respondents.

Table (4. 12): Brand Awareness from Communication Channels of the Respondents

Brand Awareness	Nivea		Pond's	
	Number	Percentage	Number	Percentage
Through Advertisement	98	63	98	65
Word of Mouth influence	52	34	45	30
Social Media	45	29	43	29
Awareness by Promoter	23	15	19	13

Data Source: Thaketa Township Survey Data 2019

Brand awareness is vital for these two brands. Most of the respondents got awareness through advertisement which constitutes 63% of Nivea respondents. Word of mouth is very important of brand awareness. Thirty fourth percent of the respondents got awareness from word of mouth and social media (Facebook) is 29% and awareness by promotor is 15% of Nivea respondents in this study. In the same way, 65% of awareness by advertising, 30% of awareness by word of mouth influence, 29% of the respondents got awareness getting from social and 13% of the respondents got awareness is getting from promoter for Pond’s brand.

Buying Place of the Respondents

The following Table (4.13) showed buying place of the respondents.

Table (4. 13): Buying Place of the Respondents

Place to buy	Nivea		Pond's	
	Number	Percentage	Number	Percentage
Grocery Store	26	17	37	25
Convenience Store	56	36	59	39
Mini Market	48	31	34	23
Super Market	92	59	88	58
Nearest Retail Store	27	17	22	15
Wet Market	2	1	15	10

Data Source: Thaketa Township Survey Data 2019

In this study, six places are mentioned to buy for these two brands. These are grocery store, convenience store, mini market, super market, nearest retail store and wet market. Nowadays, most of the consumers are enjoying to buy from modern trade store, such as convenience store, mini market and super market with open shelves type and it is easy to choose and they can spend more time for shopping and it is a nice place to buy and there are many varieties to choose. According to the study, most of the respondents prefer to buy from super market (59% of respondents in Nivea and 58% of respondents in Pond's) and 36% of Nivea respondents and 39% of Pond's respondents prefer from convenience, 1% of Nivea respondents and 10% of Pond's respondents prefer to buy from wet market.

Promotions Interest of the Respondents

The Table (4.14) showed promotions interest of the respondents.

Table (4. 14): Promotions Interest of the Respondents

Promotions	Nivea		Pond's	
	Number	Percentage	Number	Percentage
Item Discount	52	34	48	32
Value discount	50	32	66	44
FOC	75	48	87	58
Premium Gift	112	72	60	40
Lucky Draw	110	71	110	73
Trade up	18	12	24	16

Data Source: Thaketa Township Survey Data 2019

All of marketing managers are using pull strategy by attractive and effective promotion schemes to persuade to buy the products. In this study, premium gift and lucky draw that is the most interesting promotions are liked by 72% and 71% of Nivea respondents respectively. Seventy three percent of Pond's respondents are interest in lucky draw promotion and 58% of Pond's respondents preferred free of charge (FOC) promotion. The rest of promotion is interested by less than 50% in these two brands.

4.3 Factor Analysis of Consumer Behaviors and Perceptions of Nivea Vs Pond's

To identify the factors which influence the consumer behaviors and perceptions on top personal care brands, factor analysis approach has been used. In this study, the principal components method was used to generate the initial solution with 24 variables which are relative with promotion, brand, product, price and availability of the product.

Reliability Analysis of Consumer Behaviors and Perceptions of Nivea Vs Pond's

This reliability analysis was referred to measure the accuracy and consistency of collected data. This method was divided into two broad categories, there was external consistency procedures and internal consistency procedures. The reliability statistics results is described in the following table.

Table (4. 15): Reliability Analysis Result

Cronbach's Alpha	No. of Items
.912	24

Data Source: Thaketa Township Survey Data 2019

Cronbach's alpha reliability coefficient of overall items is calculated as 0.912 which was greater than 0.7, high level of internal consistency for the overall items.

KMO and Bartlett's Test

Bartlett Test of Sphericity test sampling adequacy values were 0.915 and yielded a value of 3246.278 and an associated degree of significance smaller than 0.001. KMO measure of sampling adequacy was 0.915. This means that the collected sample was adequate significantly correlation among these collected variables.

Table (4. 16): Kaiser Meyer Olkin (KMO) and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.915
Bartlett's Test of Sphericity	Approx. Chi-Square	3246.278
	df	276
	Sig.	0.000

Data Source: Thaketa Township Survey Data 2019

Factor Analysis (First Run)

Factor analysis process uses initial solution statistics and KMO and Bartlett's test for sphericity of correlation matrix and also selected principal component method and extract based on eigenvalues greater than 1. Then, selected varimax rotation method and selected coefficient absolute value are 0.33.

According to factor analysis, output of total variance was presented to extract associated eigenvalues with 4 common factors which was eigenvalue greater than 1. The percentage of total variance was described as 35.136%, 10.014%, 5.825% and 5.288% respectively. This was 56.263% of the total variance attributable to 4 factors.

Table (4. 17): Output for Total Variance Explained

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.433	35.136	35.136	8.433	35.136	35.136	3.893	16.220	16.220
2	2.403	10.014	45.150	2.403	10.014	45.150	3.428	14.282	30.502
3	1.398	5.825	50.975	1.398	5.825	50.975	3.277	13.653	44.155
4	1.269	5.288	56.263	1.269	5.288	56.263	2.906	12.108	56.263
5	.980	4.085	60.348						
6	.832	3.466	63.814						
7	.803	3.346	67.160						
8	.764	3.185	70.345						
9	.735	3.062	73.407						
10	.653	2.722	76.129						
11	.598	2.492	78.622						
12	.582	2.424	81.046						
13	.558	2.323	83.369						
14	.516	2.149	85.519						
15	.472	1.965	87.484						
16	.446	1.856	89.340						
17	.406	1.690	91.030						
18	.387	1.613	92.643						
19	.361	1.506	94.149						
20	.322	1.342	95.491						
21	.311	1.297	96.787						
22	.286	1.191	97.979						
23	.252	1.049	99.028						
24	.233	.972	100.000						

Extraction Method: Principal Component Analysis.

Data Source: Thaketa Township Survey Data 2019

Component Matrix

The component matrix described Table (4.18). The 4 components extracted with principal component analysis method. Variables Q39, Q33, Q28, Q31, Q27, Q36, Q25, Q24, Q37, Q22, Q38, Q20, Q30, Q21, Q32, Q47 and Q23 are factor 1, variables. Q43, Q45, Q44 and Q41 are Factor 2.There is no presenting in Factor 3.Only Q29 is Factor4.

Table (4. 18): Factor Analysis Output for Component Matrix

Component Matrix[a]

	Component			
	1	2	3	4
Q39	.748			
Q33	.727			
Q28	.713			
Q31	.668			
Q27	.667			
Q36	.658		.381	
Q37	.656	-.392	.387	
Q25	.654			
Q22	.654		-.339	
Q24	.653		-.344	
Q38	.639		.406	
Q20	.617			-.360
Q42	.615	.357		
Q30	.605			.455
Q35	.581	-.501	.348	
Q21	.561			
Q32	.535			.439
Q47	.531			
Q23	.499		-.334	
Q43	.398	.671		
Q45		.628		
Q44	.354	.568		
Q41	.491	.545		
Q29	.412			.526

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

Data Source: Thaketa Township Survey Data 2019

Factor Analysis (Second Run)

Factor analysis process use initial solution statistics and KMO and Bartlett's test for sphericity of correlation matrix and also selected principal component method and extract based on eigenvalues greater than 1. Then, selected varimax rotation method and selected coefficient absolute value are 0.33.

In Factor analysis section, output of total variance was presented to extract associated eigenvalues with 4 common factors which was eigenvalue greater than 1. The percentage of total variance was described as 35.136%, 10.014%, 5.825% and 5.288% respectively. This was 56.263% of the total variance attributable to 4 factors. The eigenvalue of the 4 common factors are the same with the first run and the second run by using varimax rotation method.

Total Variance Explained

The total variance extracted by the components for all the variables is put together in this selection. Table (4.19) shows the actual factors that were extracted. It very evident that variance explained is about 56% and the analysis has extracted 4 components by using principle component analysis (PCA) that considers the linear combination of the variables and groups those variables which have maximum relation between them and the second one has next level of variance but lower than the previous one.

Sometimes, the direction of the data measured for the variables may be different and the direction of the factor extracted may be slightly different. In other words, loading of each variable in a factor can be improved. This problem arises because, some variables loads higher on some factors and loads lower on some others. To overcome this, rotation method, which improved the loading of the variables on each of the factors has been used. Table (4.19) showed the rotated components matrix by using "Varimax".

Table (4. 19): Output for Second run Total Variance Explained

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.433	35.136	35.136	8.433	35.136	35.136	3.893	16.220	16.220
2	2.403	10.014	45.150	2.403	10.014	45.150	3.428	14.282	30.502
3	1.398	5.825	50.975	1.398	5.825	50.975	3.277	13.653	44.155
4	1.269	5.288	56.263	1.269	5.288	56.263	2.906	12.108	56.263
5	.980	4.085	60.348						
6	.832	3.466	63.814						
7	.803	3.346	67.160						
8	.764	3.185	70.345						
9	.735	3.062	73.407						
10	.653	2.722	76.129						
11	.598	2.492	78.622						
12	.582	2.424	81.046						
13	.558	2.323	83.369						
14	.516	2.149	85.519						
15	.472	1.965	87.484						
16	.446	1.856	89.340						
17	.406	1.690	91.030						
18	.387	1.613	92.643						
19	.361	1.506	94.149						
20	.322	1.342	95.491						
21	.311	1.297	96.787						
22	.286	1.191	97.979						
23	.252	1.049	99.028						
24	.233	.972	100.000						

Extraction Method: Principal Component Analysis.

Data Source: Thaketa Township Survey Data 2019

Rotated Component Martix

The rotated component matrix was described after 6 iterations rotation converged by using with principal component analysis extraction method and varimax with Kaiser Normalization rotation method. The rotation factor structures were shown in the Table (4.20) Q20, Q24, Q22, Q21, Q33, Q27, Q25 and Q28 are Factor-I, Q37, Q35, Q38, Q36 and Q39 are Factor-II, Q43, Q45, Q41, Q44, Q42 and Q47 are Factor-III, Q30, Q29, Q32, Q31 and Q23 are Factor-IV respectively.

Table (4. 20): Output for Rotated Component Matrix

Rotated Component Matrix[a]

	Component			
	1	2	3	4
Q39	0.741			
Q33	0.725			
Q28	0.692			
Q31	0.632			
Q27	0.573			
Q36	0.513			0.458
Q37	0.452			0.411
Q25	0.441			0.440
Q22		0.810		
Q24		0.782		
Q38		0.760		
Q20		0.674		
Q42		0.558	0.404	
Q30			0.790	
Q35			0.738	
Q21			0.71	
Q32			0.667	
Q47	0.381		0.548	
Q23			0.476	
Q43				0.689
Q45				0.648
Q44				0.639
Q41		0.385		0.544
Q29	0.427			0.457

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Data Source: Thaketa Township Survey Data 2019

In this study, the four factors are influencing on consumer behaviours and perceptions of top personal care Nivea and Pond's in the Thaketa Township.

Factor-I is identified in eight attributes and factor loadings are 0.741 for Q39, 0.725 for Q33, 0.692 for Q28, 0.632 for Q31,0.573 for Q27, 0.513 for Q36,0.452 for Q37 and 0.441 for Q25 respectively. The attributes questions are associated with using in

confidence for skin care product, best quality production, and consumer satisfaction on product quality, consumer's feeling on product quality and brand, attractive on packaging quality, recommendation on product quality. Therefore, it was named as quality and confidence factor. The attributives are showed in Table (4.21).

Table (4. 21): Factor -I

Q39	When I use the skin care product, I have confidence.	.741
Q33	The product quality is the best for you.	.725
Q28	I was satisfied by the quality of the product.	.692
Q31	When I use the skin care product, I feel it makes me beautiful.	.632
Q27	I love this brand.	.573
Q36	I will be the loyal customer of this brand forever.	.513
Q37	Product packaging is very attractive and easy to recognize the product.	.452
Q25	If I have to say the chance, I would like to recommend this brand to a friend or relative.	.441

Data Source: Thaketa Township Survey Data 2019

Factor -II is identified five attributes and factor loadings are 0.810 for Q22, 0.782 for Q24, 0.760 for Q38, 0.674 for Q20 and 0.558 for Q42 respectively. The attributes associated with product available, easy to find the product, visible in the market, attractive display in the outlet. Therefore, it was named as availability factor. The attributives are showed in Table (4.22).

Table (4. 22): Factor -II

Q22	This product is available in shop whenever I want to buy.	.810
Q24	The product can be bought everywhere.	.782
Q38	You can easily find the product on the shelf when you visit the store.	.760
Q20	The brand can be seen in so many product range at the every shop.	.674
Q42	The product display is very attractive.	.558

Data Source: Thaketa Township Survey Data 2019

Factor-III is identified in six attributes and factor loadings are 0.790 for Q30, 0.738 for Q35, 0.710 for Q21, 0.667 for Q32 and 0.548 for Q47 and 0.476 for Q23 respectively. The attributes are associated with attractive on new promotion communication activities, ability to memorized promotion activities, and demand on promotion period, consumer chose on brand promotion, consumer interest on promotion activities, and capacity on brand's promoters. Therefore, it was named as promotions factor. The attributives are presented in Table (4.23).

Table (4. 23): Factor-III

Q30	Promotor always calls me whenever new promotion comes.	.790
Q35	I have a good memory regarding the promotion this year.	.738
Q21	I always buy the product during promotion season.	.710
Q32	I chose the brand which is cheaper than other brand.	.667
Q47	I am interested in every promotion of this brand.	.548
Q23	The brand's promotor' are well trained and explain well about product knowledge.	.476

Data Source: Thaketa Township Survey Data 2019

Factor-IV is identified in five attributes and factor loadings are 0.689 for Q43, 0.648 for Q45, 0.639 for Q44, 0.544 for Q41 and 0.457 for Q29 respectively. The attributes are associated with attractive brand advertising, well-known brand, brand is representing to young people, brand color is matched with the product, esteem on brand name. Therefore, it was named as to brand image factor. The attributives are showed in Table (4.24).

Table (4. 24): Factor -IV

Q43	I think Brand Advertising is very attractive to me.	.689
Q45	I am using this brand because of brand Image.	.648
Q44	Brand is representing to young people.	.639
Q41	Brand Color is matched with the product.	.544
Q29	I think, the product quality is more than I paid.	.457

Data Source: Thaketa Township Survey Data 2019

Reliability for each Factors

According to Table (4.25) the Cronbach's Alpha coefficients of the four factors are range from 0.714 to 0.864. The results found that indicate to internal consistency of the factors and reliability of the each scale.

Table (4. 25): Cronbach's Alpha Coefficient of each Factors

Factors	Cronbach's Alpha	No. of Items
Quality and Confidence	0.864	8
Availability	0.863	5
Promotion	0.788	6
Brand Image	0.714	5

Data Source: Thaketa Township Survey Data 2019

4.4 Analysis of Binary Logistics Regression Model

Based on the data of consumer behaviors and perceptions on top personal care Nivea Vs Pond's (Thaketa Township) in Yangon Region, the significant four factors are studied by using Binary Logistic Regression Model.

Variables in the Model

In this study, the respondent of Nivea users and the respondent of non-Nivea users (Pond's) are considered as dependent variable. Quality and confidence factor, availability factor, promotions factors and brand image factors are considered as independent variables.

X_i =1, if the respondent was using Nivea personal care products.

=0, if the respondent was not using Nivea personal care products.

F_1 = Factor of quality and confidence

F_2 = Factor of availability

F_3 = Factor of promotions

F_4 = Factor of brand image

The binary logistics regression model can be written as

$$\log[\pi(X)] = \log[\frac{\pi_i}{1-\pi_i}] = \beta_0 + \beta_1 F_1 + \beta_2 F_2 + \beta_3 F_3 + \beta_4 F_4 + \varepsilon_i$$

Where,

β_0 = the constant of the equation

β_1 = the coefficient of the predictor variable i

X_i = dependent variable

F_i = independent variable

Table (4. 26): Model Fitting Information for Binary Logistic Regression Model

Model fitting criteria	Chi Square Value	df	p-value
Omnibus Test of Model Coefficient	21.528	4	0.000
Hosmer and Lemeshow (H-L) Tests	4.482	8	0.811
-2Log Likelihood	402.625		
Pseudo R^2			
Cox & Snell R Square	0.068		
Nagelkerke R Square	0.091		

Data Source: Thaketa Township Survey Data 2019

In the Omnibus tests of model coefficients, the inclusion of the four predictor variables yield a chi-square value of 21.528 with 4df, p < .000. Thus, the overall model is statistically significant, which means that adding the four predictor variables to the model have significantly increased ability to predict whether the factors influence on buying decision of Nivea and Pond's brand.

The -2log likelihood statistic, which is a measure of how poorly the overall model predicts variations in the outcome of interest (Nivea versus Pond's). The -2log likelihood has a chi-square distribution with smaller value indicating better model fit. The -2log likelihood value is 402.625. By itself, this number is not very informative and is used primarily for nested model comparisons. In comparison with the base model that accepts only the intercept, inclusion of the four predictor variable reduced the -2log likelihood statistic by 21.528, the chi-square value in presented in the Table (4.26). Adding the four predictor variables reduced the base model's -2LL statistics by 21.528, therefore, the base model's -2LL statistic is 402.625+21.528=424.153. The Cox and Snell R^2 (0.068) and the Nagelkerke R^2(0.091) measures indicate a reasonable fit of the model to the data. The final measure of model fit is the Hosmer and Lemeshow test, which measures the correspondence of the actual and predicted values of the dependent variable. The better model fit is indicated by a smaller difference in the observed and

predicted classification. All of the measures of model fit improved over the base model that contains only the intercept. The -2LL value decreased to 402.625 χ^2 (df = 4) = 21.528, p<.000. The pseudo R^2 values are ranged from 0.068 to 0.091 and represents improvement over the base model. The Hosmer and Lemeshow test showed non-significance, indicating no difference in the distribution of the actual and predicted dependent values, χ^2 (df = 8) = 4.483, p > 0.811.

Table (4. 27): Parameter Estimates for Binary Logistic Model

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
Quality and Confidence	.451	.126	12.892	1	.000	1.571	1.228	2.010
Availability	-.075	.122	.377	1	.539	.928	.730	1.179
Promotion	-.100	.120	.694	1	.405	.905	.716	1.144
Brand Image	.315	.122	6.673	1	.010	1.370	1.079	1.740
Constant	-.027	.118	.053	1	.817	.973		

a. Variable(s) entered on step 1: factor_1, factor_2, factor_3, factor_4.

Data Source: Thaketa Township Survey Data 2019

The Table (4.23) presents the Wald chi-square statistic, which is used to test the statistical significance of each coefficient (β) in the model. More specifically, the Wald chi-square statistic tests the unique contribution of each predictor that is holding constant the other predictors. If quality and confidence parameter increase 1 unit, 1.571 increase factor influencing on consumer behaviours and perception of Nivea users. If brand image parameter increase 1 unit, 1.370 increase factor influencing on consumer behaviours and perception of Nivea users.

The signs of the correlation of quality and confidence, and brand image factors are positive and the signs of the correlation of availability and promotions factors are negative. It can be said that the quality and confidence, and brand image of the products are more likely to influence on the Nivea users while the availability and promotions of the product are less likely to influence on the Nivea users. On the other hand, It can be said that quality and confidence, brand image is less likely to influence on the non-Nivea user (Pond's) while availability and promotions of the product are more likely to influence on the non-Nivea user (Pond's).

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CHAPTER V
CONCLUSION

5.1 Findings

This study was done to identify predictors influencing on consumer behavior and perception of top personal care brands in Thaketa Township. The overall objective of providing value to customers continuously and more effectively than the competition is to have highly satisfied customers, this strategy of customer retention market it in the best interest of customers to stay with the company rather than switch to another firm. In almost all business situations, it is more expensive to win new customers than to keep existing ones. Small reductions in customer defections produce significant increases in profit because (1) loyal customers buy more products (2) loyal customers are less price sensitive and pay less attention to competitor's advertisement (3) servicing existing customers who are familiar with the firm offerings and processes is cheaper (4) loyal customers spread positive word of mouth and refer other customers.

According to the results, the younger aged respondents used more than older age respondents in these two brands. Moreover, it can be observed that the female respondents are nearly double of the male respondents. Most of the users of Nivea and Pond's can be found that the group of workers and a few users of these brands can be found in high school students.

Based on the findings, the highest group with monthly income above 7 lakhs is found in 24% of Nivea respondents. The highest group with monthly income 2.5 lakhs-3.5 lakhs is found in 23% in Pond's. Most of the respondent are educated in Nivea is 96% and in Pond's is 74%. All of the respondents used face category. Those who are Face category of the Ponds are nearly three times than Nivea those face users. One of the main reasons is the respondent who need to go to their job for longer time and necessary to apply face crèmes to maintain their complexion. Two thirds of the respondents have trust in beauty blogger's recommendation. According to the results, One third of the Nivea respondents are loyal users who are using for above 5 years of consuming time. In this study of brand switching to and from, Nivea to Ponds brand switching is 31% of Ponds respondents. It means that Nivea is losing customer share

and Ponds is gaining more customers. And also Nivea is gaining other brand's customers which is 64% of the Nivea respondents as well as Ponds is gaining customers from other brand's users 46% of the Pond respondents. It can be observed that the consumer's affordable price which is above 2000 kyats. It is nearly ninety percent of the respondents. The reasons for choice of the respondents is mainly the cause of product quality which is found in 75%, price is in 56% in Nivea and also product quality in Pond's is found in 69% and price is found in 44%. Brand famous is more in Nivea but friend's recommendation is more in Pond's. The results of the study revealed brand awareness of these two brands are through advertising channel which is 63% and 65% of Nivea and Pond's respondents. Nowadays, most of the customers prefer to buy from modern trade store like City Mart Super Market. If the consumers think that the promotion is good, the consumer have decided to buy the products. Among the promotions, Nivea respondent are interested in premium gift and lucky draw promotion. Pond's respondents are interested in lucky draw and FOC promotion.

According to the observations, the four factors solution explained 56.263% of the overall variance. The four factors are quality and confidence, availability, promotions and brand image factors. Furthermore, the binary logistic regression used to determine how the factors are influencing on consumer behaviours and perceptions of Nivea users which is more likely influencing on quality and confidence, brand image but less likely influencing on consumer behaviours and perception of Nivea user which is availability and promotions factors. On the other hand, availability factors and promotions factors are influencing on consumer behaviours and perceptions of non-Nivea users (Pond's) while the quality and confidence, and brand image factors are less likely influencing on consumer behaviours and perceptions of non-Nivea users (Pond's).

5.2 Recommendation

Based on the findings of this study, some recommendations would like to be made with the quality and confidence factor, availability factor, promotions factors and brand image factors are influencing on the consumers of both brands. The consumers making more buying decision on the brands because of they like and get personal confidence. It is recommended that Nivea should maintain the quality control level of each product because consumers are using face category, body category and deodorant category and brand image factor also influences more on consumer behaviours and

perceptions of making buying decision. Nivea brand should be focused on product availability and promotions to get more share of the product. As Pond's brand, availability factor and promotions factors are more influencing on consumer behaviours and perceptions of buying decision. The quality and confidence factors and brand image factors are less likely influencing on consumer behaviours and perceptions of non-Nivea users (Pond's). Product availability is performance of the company distribution. The customers are making buying decision on wherever the customer sees the product in store. The attractive promotions can generate volume sales. Pond's brand should be more focused on product quality and brand awareness.

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APPENDICES

APPENDIX I

There are 19 wards in Thaketa Township. The list of wards and no. of household in each ward is presented as follows.

No.	Ward	No. of Household
1	Set Hmu Let Hmu Ward	935
2	No (1) Ah Naw Mar Ward	3552
3	No (1) Htu Par Yon Ward	2587
4	No (2) Ward (South)	1620
5	No (2) Ward (North)	2714
6	No (3) Yan Pyay Ward	2957
7	No (3) Man Pyay Ward	2192
8	No (4) Ward (South)	1694
9	No (4) Ward (North)	1363
10	No (5) Ward	1574
11	No (6) Ward (East)	1807
12	No (6) Ward (West)	2117
13	No (7) Ward (East)	2858
14	No (7) Ward (West)	1282
15	No (8) Ward	2941
16	No (9) Ward	2053
17	No (10) Ward (South)	7386
18	No (10) Ward (North)	2113
19	Shu Khin Thar Ward	1511
Total		45256

Determination of sample size

Cochran (1963/ fisher et at.(1991) sample size determination formula for populations less than 10,000 is used as follows.

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

Where

$$n_0 = \frac{Z^2 p(1-p)}{e^2}$$

N= population size = 8626

Z= 95% confidence level = 1.96

E = desired level of precision = 0.055

P= population proportion (if unknown, 0.5)

Therefore,

$$n_0 = \frac{(1.96)^2(0.5)(0.5)}{0.055^2} = 317.48$$

The sample size $n = \frac{n_0}{1+\frac{(n_0-1)}{N}} = \frac{317}{1+\frac{(317-1)}{8626}}$

$= 305.79 \approx 306$

The required sample size was at least 306 households. The sample size is allocated to each selected ward by using proportional allocation as follows.

In this survey, a sample 3 wards (ward no. 1, 3 and 6) was randomly selected from a total of 19 wards in Thaketa Township. From the selected wards, a systematic sample of 1 in 28 households was chosen. In the selected households 155 Nivea users and 151 Pond's user were interviewed in order to know the consumer behaviors and perceptions.

Sampling interval = K = N/n = 8626/306 = 28.1 ≈ 28

The total number of households and the corresponding sample household of the selected wards are shown in the following table.

List of Selected Wards and Number of Households in Thaketa

Ward No.	No. of Households	No. of Sample Households
1	3552	126
3	2957	105
6	2117	75
Total	8626	306

Source from: Government Administration Office

APPENDIX II

Questionnaire

"Factor Influencing on Consumer Behaviours and Perceptions of Top Personal Care Brands (NIVEA Vs PONDS)"

My name is Aye Aye Khaing. I am studying the Master of Applied Statistics (MAS) programme of Yangon University of Economics. I would like to get information from the questionnaires which will be used only for thesis purpose. Please give me 15 minutes only to answer all. Data collected for the purpose of studying from individual respondents, this will be kept as confidential. Assuring respondents to be anonymous will allow you to put your privacy concerns at ease and answer all questions truthfully. Thank you very much for your participation.

Please tick ( ) for the appropriate answer.

Part – I

General Information

1. Age

   10~20 ☐ 21-30 ☐ 31-40 ☐ 41-50 ☐ 50 Above ☐

2. Gender

   Male ☐ Female ☐

3. Types

   High School Student ☐ University Student ☐ Worker ☐ Housewife ☐

4. Monthly Income (Lakh MMK/ Month)

   0.5- 1.5Lakhs ☐ 1.5-2.5Lakhs ☐ 2.5~3.5Lakhs ☐

   3.5~4.5Lakhs ☐ 4.5~5.5Lakhs ☐ 5.5~7.0Lakhs ☐

   Above 7Lakhs ☐

5. Educational Levels

   Diploma ☐ Graduate ☐ Post Graduate ☐ Master ☐ Other ☐

6. Which Skin Care Brand are you using now??

   Nivea ☐ Ponds ☐

7. Which Category currently using?

   Face ☐ Body ☐ Deodorant ☐ Face &Body ☐

   Face & Deodorant ☐ Body & Deodorant ☐ All ☐

8. Most of the people trust on beauty blogger's recommendation. I am going to start using this product.

   Yes ☐ No ☐

9. How long have you been using the Brand?

   Less than 6 months ☐ 6months~1 Years ☐ 1-2 Years ☐ 2-3 Years ☐

   3-5 Years ☐ Over 5 Years ☐

10. Did you switch from the brand to another brand for skin care product?

    From Nivea to Ponds ☐ From Ponds to Nivea ☐ From Other Brand to Nivea ☐

    From Other Brand to Ponds ☐ Never ☐

11. Please answer the following one.

If you switched, why you had you switched to current brand?

---

12. Which brand is mostly representing to women?

    Nivea ☐ Ponds ☐

13. Which brand is mostly representing to Men?

    Nivea ☐ Ponds ☐

14. I always choose the product which price is ranged mentioned below (By Kyats)

    1000 ~2000 ☐ 2000~3000 ☐ 3000~4000 ☐ 5000 & above ☐

15. When you choose skin care products, which of the following factors matter to you? (Multiple Answers)

    Product Ingredients ☐

    Convenience to buy ☐

    Promotor's Recommend ☐

    Product Quality ☐

    Price ☐

    Product Availability ☐

    Friends Recommend ☐

    Brand Famous ☐

    Product Packaging ☐

    Beause of TVC Advertising ☐

    Others ☐

16. How did you come to know about this Brand? (Multiple Answers)

Through Advertisements ☐

Word of mouth influence ☐

Social Media ☐

Awareness by Promoter ☐

17. Where do you usually purchase this product?

Grocery Store ☐

Convenience Store ☐

Mini Market ☐

Super Market ☐

Nearest Retail Store ☐

Wet Market ☐

Other ☐

18. What kind of promotion do you like?

(Multiple answers- please give rating (1 to 6 scores)

Item Discount ☐

Value discount ☐

FOC ☐

Premium Gift ☐

Lucky Draw ☐

Trade up ☐

19. Do you recognize the brand color?

Red ☐ Blue ☐ Pink ☐ Purple ☐ Grey ☐

Part - II

20. When I use the skin care product, I have confidence

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

21. When I use the skin care product, I feel it makes me beautiful.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

22. I was satisfied by the quality of the product.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

23. I think, the product quality is more than I paid.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

24. The product quality is the best for me.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

25. Product packaging is very attractive and easy to recognize the product.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

26. I am willing to try new skin care product from this brand.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

27. I will be the loyal customer of this brand forever.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

28. If I have to say the chance, I would like to recommend this brand to a friend or relative.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

29. I am using this brand because of brand Image.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

30. I think Brand Advertising is very attractive to me.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

31. Brand Color is matched with the product.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

32. I love this brand.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

If you agree, Please write down your comments here! Thank you.

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33. The Brand are representing to young people.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

34. The product can be bought everywhere.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

35. The brand can be seen in so many product range at the every shop.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

36. This product is available in shop whenever I want to buy.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

37. You can easily find the product on the shelf when you visit the store.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

38. The product display is very attractive.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

39. The brand's Promotor' are well trained and explain well about product knowledge.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

If you disagree, please write down your comment here!

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40. I have a good memory regarding the promotion this year.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

If you agree, please write down your comment here!

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41. I usually buy form promotor. Promotor always call me whenever new promotion coming. If yes, please tick on your prefer brand only.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

42. Please answer your prefer brand only. I chose Nivea/Pond which is cheaper than Ponds.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

43. I am interested in every promotion of this brand.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

44. I always buy the product during promotion season.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

45. When I saw TVC advertising, I decided to use this brand.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐